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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,024	12/23/2004	Michelle A. Raymond	H0003511	7663

128 7590 04/19/2007

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EXAMINER	
CHEN, QING	
ART UNIT	**PAPER NUMBER**
2191	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/507,024	RAYMOND ET AL.	
	Examiner	Art Unit	
	Qing Chen	2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *42-80* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *42-80* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20070125*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to the amendment filed on March 5, 2007.

2. **Claims 42-80** are pending.

3. **Claims 1-41** have been cancelled.

4. **Claims 42-80** have been added.

5. The objection to the declaration is withdrawn in view of Applicant's arguments.

6. The objection to the abstract is withdrawn in view of Applicant's amendments to the abstract.

7. The objections to the specification are withdrawn in view of Applicant's amendments to the specification. However, Applicant's amendments to the specification fail to fully address the objection due to lacking a reference to the submitted appendix. Accordingly, this objection is maintained and further explained below.

8. The objections to Claims 3-9 are withdrawn in view of Applicant's cancellation of the claims.

9. The 35 U.S.C. § 112, second paragraph, rejections of Claims 10-37 are withdrawn in view of Applicant's cancellation of the claims.

10. The 35 U.S.C. § 101 rejections of Claims 1-23 and 38-41 are withdrawn in view of Applicant's cancellation of the claims.

Response to Amendment

Specification

11. The disclosure is objected to because of the following informalities: the specification does not provide an explanation and a reference to the submitted appendix.

Appropriate correction is required.

Claim Objections

12. **Claim 72** is objected to because of the following informalities:

- **Claim 72** contains a typographical error: "computer readable media" should read -- computer readable medium --.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. **Claims 42-80** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 42, 52, 62, and 72 recite the following limitations:

- "the users,"

- "the display objects,"
- "the requirements of the interaction delivery device,"
- "the set of interaction delivery devices," and
- "the set of display objects."

There are insufficient antecedent basis for these limitations in the claims. In the interest of compact prosecution, the Examiner subsequently interprets these limitations as reading:

- "users,"
- "display objects,"
- "requirements of the interaction delivery device,"
- "a set of interaction delivery devices," and
- "a set of display objects,"

respectively, for the purpose of further examination.

Claims 43-51 depend on Claim 42 and, therefore, suffer the same deficiency as Claim 42.

Claims 53-61 depend on Claim 52 and, therefore, suffer the same deficiency as Claim 52.

Claims 63-71 depend on Claim 62 and, therefore, suffer the same deficiency as Claim 62.

Claims 73-80 depend on Claim 72 and, therefore, suffer the same deficiency as Claim 72.

Claims 46, 56, 66, and 75 recite the limitation "to the extent." The term "extent" is a relative term, which renders the claims indefinite. The term "extent" is not defined by the claims nor does the specification provide a standard for ascertaining the requisite degree and one of ordinary skill in the art would not be able to reasonably determine the scope of the invention. In the interest of compact prosecution, the Examiner subsequently does not give any patentable weight to this limitation for the purpose of further examination.

Claim 47 depends on Claim 46 and, therefore, suffers the same deficiency as Claim 46.

Claim 57 depends on Claim 56 and, therefore, suffers the same deficiency as Claim 56.

Claim 67 depends on Claim 66 and, therefore, suffers the same deficiency as Claim 66.

Claim 76 depends on Claim 75 and, therefore, suffers the same deficiency as Claim 75.

Claim Rejections - 35 USC § 101

15. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

16. **Claims 72-80** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 72-80 recite computer readable media as a claimed element. However, the limitation of "computer readable media with instructions" can be reasonably interpreted as the computer readable media carrying or transmitting electrical signals, since the instructions are not

recorded on the computer readable media, so as to permit the function of the descriptive material to be realized when executed.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism *per se*, and as such are non-statutory natural phenomena. *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112-14 (1853). Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. **Claims 42-45, 49, 52-55, 59, 62-65, 69, 72-74, and 78** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eisenstein et al., "Applying Model-Based Techniques to the Development of UIs for Mobile Computers," 2001 (hereinafter Eisenstein et al.)** in view of **Puerta et al., "Towards a General Computational Framework for Model-Based Interface Development Systems," 1999 (hereinafter Puerta et al.)**.

As per **Claim 42**, Eisenstein et al. disclose:

- receiving a domain model, a user model, a task model, a device model, and a presentation elements library, wherein the domain model defines application requirements for which the user interface is to be used, wherein the user model defines user requirements of users who are to interface with the user interface, wherein the task model defines task requirements of tasks to be performed between the user interface and users, wherein the device model defines interaction delivery devices that are available to deliver the user interface, and wherein the presentation elements library contains display objects used to present information to or acquire information from a user of the user interface being designed *(see Figure 2; Page 70, "A platform model describes the various computer systems that may run a UI. This model includes information regarding the constraints placed on the UI by the platform. The platform model contains an element for each platform that is supported, and each element contains attributes describing features and constraints." and "A presentation model describes the visual appearance of the user interface. The presentation model includes information describing the hierarchy of windows and their widgets (e.g., sliders, list boxes), stylistic choices, and the selection and placement of these widgets."; Page 71, "A task model is a structured representation of the tasks that the user of the software may want to perform. The task model is hierarchically decomposed into subtasks, and information regarding goals, preconditions, and postconditions may be supplied." and "For many applications, it is essential to model the users themselves, especially when there are multiple users with different preferences, abilities, and privileges. It is also often appropriate to model the domain characteristics of the tasks supported by the UI. Such information often guides the selection of widgets.")*;

- generating a set of presentations, wherein each presentation in the set of presentations comprises an interaction delivery device and a display object that meets requirements of the interaction delivery device, wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the task requirements defined by the task model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the task requirements defined by the task model and the application requirements defined by the domain model *(see Figures 2 and 3; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- displaying the set of presentations to a user interface designer *(see Page 72, "Under our proposed architecture, it is still left to the interface designer to specify a set of alternative presentation structures.")*.

However, Eisenstein et al. do not disclose:

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model.

Puerta et al. disclose:

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model *(see Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process."; Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171).*

As per **Claim 43**, the rejection of **Claim 42** is incorporated; and Eisenstein et al. further disclose:

- responsive to at least one input from the user interface designer, generating the user interface *(see Figures 6 and 7).*

As per **Claim 44**, the rejection of **Claim 42** is incorporated; and Eisenstein et al. further disclose:

- wherein generating a set of presentations is performed by a reasoning engine *(see Figure 3; Page 72, "This mediator should determine the maximum usable screen resolution for the relevant device, and evaluate the amount of screen resolution required by each presentation structure alternative. It can then select the presentation structure that consumes an amount of screen resolution that falls just under the maximum (fig. 3).")*.

As per **Claim 45**, the rejection of **Claim 42** is incorporated; and Eisenstein et al. further disclose:

- matching capabilities of the interactive delivery devices in the device model to task requirements defined in the task model *(see Figure 5; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- matching capabilities of display objects in the presentation elements library to task requirements defined in the task model *(see Figure 5; Page 74, "Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks.")*.

However, Eisenstein et al. do not disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model.

Puerta et al. disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model *(see Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process.")*; and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model *(see Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171)*.

As per **Claim 49**, the rejection of **Claim 42** is incorporated; and Eisenstein et al. further disclose:

- wherein the domain model, the user model, the task model, and the device model are expressed in a common notation format *(see Page 70, "The MIMIC modeling language meets these criteria, and it is the language we have chosen to use for UI modeling.").*

As per **Claim 52**, Eisenstein et al. disclose:

- creating a domain model, a user model, a task model, a device model, and a presentation elements library, wherein the domain model defines application requirements for which the user interface is to be used, wherein the user model defines user requirements of users who are to interface with the user interface, wherein the task model defines task requirements of tasks to be performed between the user interface and users, wherein the device model defines interaction delivery devices that are available to deliver the user interface, and wherein the presentation elements library contains display objects used to present information to or acquire information from a user of the user interface being designed *(see Figure 2; Page 70, "A platform model describes the various computer systems that may run a UI. This model includes information regarding the constraints placed on the UI by the platform. The platform model contains an element for each platform that is supported, and each element contains attributes describing features and constraints." and "A presentation model describes the visual appearance of the user interface. The presentation model includes information describing the hierarchy of windows and their widgets (e.g., sliders, list boxes), stylistic choices, and the selection and placement of these widgets."; Page 71, "A task model is a structured*

representation of the tasks that the user of the software may want to perform. The task model is hierarchically decomposed into subtasks, and information regarding goals, preconditions, and postconditions may be supplied." and "For many applications, it is essential to model the users themselves, especially when there are multiple users with different preferences, abilities, and privileges. It is also often appropriate to model the domain characteristics of the tasks supported by the UI. Such information often guides the selection of widgets.");

- generating a set of presentations, wherein each presentation in the set of presentations comprises an interaction delivery device and a display object that meets requirements of the interaction delivery device, wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the task requirements defined by the task model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the task requirements defined by the task model and the application requirements defined by the domain model *(see Figures 2 and 3; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- displaying the set of presentations to a user interface designer *(see Page 72, "Under our proposed architecture, it is still left to the interface designer to specify a set of alternative presentation structures.")*.

However, Eisenstein et al. do not disclose:

- storing the domain model, user model, task model, device model, and presentation elements library into computer readable media; and

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model.

Official Notice is taken that it is old and well known within the computing art to store a computer program or components of the computer program in a computer readable media. In a computing system, components of a computer program are stored in a computer readable media so a processing unit may execute the instructions stored therein. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include storing the domain model, user model, task model, device model, and presentation elements library into computer readable media. The modification would be obvious because one of ordinary skill in the art would be motivated to execute the components of the computer program.

Puerta et al. disclose:

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model *(see Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process."; Page 174, "An interface model must*

also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171).*

As per **Claim 53**, the rejection of **Claim 52** is incorporated; and Eisenstein et al. further disclose:

- responsive to at least one input from the user interface designer, generating the user interface *(see Figures 6 and 7).*

As per **Claim 54**, the rejection of **Claim 52** is incorporated; and Eisenstein et al. further disclose:

- wherein generating a set of presentations is performed by a reasoning engine *(see Figure 3; Page 72, "This mediator should determine the maximum usable screen resolution for the relevant device, and evaluate the amount of screen resolution required by each presentation*

structure alternative. It can then select the presentation structure that consumes an amount of screen resolution that falls just under the maximum (fig. 3).").

As per **Claim 55**, the rejection of **Claim 52** is incorporated; and Eisenstein et al. further disclose:

- matching capabilities of the interactive delivery devices in the device model to task requirements defined in the task model *(see Figure 5; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- matching capabilities of display objects in the presentation elements library to task requirements defined in the task model *(see Figure 5; Page 74, "Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks.").*

However, Eisenstein et al. do not disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model.

Puerta et al. disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model *(see Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process.")*; and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model *(see Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171)*.

As per **Claim 59**, the rejection of **Claim 52** is incorporated; and Eisenstein et al. further disclose:

- wherein the domain model, the user model, the task model, and the device model are expressed in a common notation format *(see Page 70, "The MIMIC modeling language meets these criteria, and it is the language we have chosen to use for UI modeling.")*.

As per **Claim 62,** Eisenstein et al. disclose:

- wherein the domain model defines application requirements for which the user interface is to be used *(see Page 71, "It is also often appropriate to model the domain characteristics of the tasks supported by the UI. Such information often guides the selection of widgets.")*;

- wherein the user model defines user requirements of users who are to interface with the user interface *(see Page 71, "For many applications, it is essential to model the users themselves, especially when there are multiple users with different preferences, abilities, and privileges.")*;

- wherein the task model defines task requirements of tasks to be performed between the user interface and users *(see Page 71, "A task model is a structured representation of the tasks that the user of the software may want to perform. The task model is hierarchically decomposed into subtasks, and information regarding goals, preconditions, and postconditions may be supplied.")*;

- wherein the device model defines interaction delivery devices that are available to deliver the user interface *(see Page 70, "A platform model describes the various computer systems that may run a UI. This model includes information regarding the constraints placed on the UI by the platform. The platform model contains an element for each platform that is supported, and each element contains attributes describing features and constraints.")*;

- wherein the presentation elements library contains display objects used to present information to or acquire information from a user of the user interface being designed *(see Figure 2; Page 70, "A presentation model describes the visual appearance of the user interface.*

The presentation model includes information describing the hierarchy of windows and their widgets (e.g., sliders, list boxes), stylistic choices, and the selection and placement of these widgets.");

- generating a set of presentations, wherein each presentation in the set of presentations comprises an interaction delivery device and a display object that meets requirements of the interaction delivery device, wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the task requirements defined by the task model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the task requirements defined by the task model and the application requirements defined by the domain model *(see Figures 2 and 3; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- displaying the set of presentations to a user interface designer *(see Page 72, "Under our proposed architecture, it is still left to the interface designer to specify a set of alternative presentation structures.")*.

However, Eisenstein et al. do not disclose:

- storing a domain model, a user model, a task model, a device model, and a presentation elements library into computer readable media; and

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model.

Official Notice is taken that it is old and well known within the computing art to store a computer program or components of the computer program in a computer readable media. In a computing system, components of a computer program are stored in a computer readable media so a processing unit may execute the instructions stored therein. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include storing a domain model, a user model, a task model, a device model, and a presentation elements library into computer readable media. The modification would be obvious because one of ordinary skill in the art would be motivated to execute the components of the computer program.

Puerta et al. disclose:

- wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model *(see Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process."; Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include wherein the interaction delivery device is selected from a set of interaction delivery devices in the device model that meets the user requirements defined by the user model, and wherein the display object is selected from a set of display objects in the presentation elements library that meets the application requirements defined by the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171)*.

As per **Claim 63**, the rejection of **Claim 62** is incorporated; and Eisenstein et al. further disclose:

- responsive to at least one input from the user interface designer, generating the user interface *(see Figures 6 and 7)*.

As per **Claim 64**, the rejection of **Claim 62** is incorporated; and Eisenstein et al. further disclose:

- wherein generating a set of presentations is performed by a reasoning engine *(see Figure 3; Page 72, "This mediator should determine the maximum usable screen resolution for the relevant device, and evaluate the amount of screen resolution required by each presentation structure alternative. It can then select the presentation structure that consumes an amount of screen resolution that falls just under the maximum (fig. 3).")*.

As per **Claim 65**, the rejection of **Claim 62** is incorporated; and Eisenstein et al. further disclose:

- matching capabilities of the interactive delivery devices in the device model to task requirements defined in the task model *(see Figure 5; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model.")*; and

- matching capabilities of display objects in the presentation elements library to task requirements defined in the task model *(see Figure 5; Page 74, "Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks.")*.

However, Eisenstein et al. do not disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model.

Puerta et al. disclose:

- matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model *(see Page 173, "Each user may be involved in all tasks in*

a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process."); and

- matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model *(see Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Puerta et al. into the teaching of Eisenstein et al. to include matching capabilities of the interactive delivery devices in the device model to user requirements defined in the user model; and matching capabilities of display objects in the presentation elements library to application requirements defined in the domain model. The modification would be obvious because one of ordinary skill in the art would be motivated to build and refine the interface model to produce a user interface *(see Puerta et al. – Page 171).*

As per **Claim 69**, the rejection of **Claim 62** is incorporated; and Eisenstein et al. further disclose:

- wherein the domain model, the user model, the task model, and the device model are expressed in a common notation format *(see Page 70, "The MIMIC modeling language meets these criteria, and it is the language we have chosen to use for UI modeling.").*

Claims 72-74 and 78 are computer readable media claims corresponding to the method claims above (Claims 42, 43, 45, and 49) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 42, 43, 45, and 49.

19. **Claims 46-48, 56-58, 66-68, and 75-77** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eisenstein et al.** in view of **Puerta et al.** as applied to Claims 42, 52, 62, and 72 above, and further in view of **Nelson et al. (US 6,243,713)**.

As per **Claim 46**, the rejection of **Claim 42** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model.

Nelson et al. disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 47**, the rejection of **Claim 46** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- sorting each presentation according to its score.

Nelson et al. disclose:

- sorting each presentation according to its score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include sorting each presentation according to its score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 48**, the rejection of **Claim 42** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score.

Nelson et al. disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 56**, the rejection of **Claim 52** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in

the domain model, the user requirements defined in the user model, and the task requirements defined in the task model.

Nelson et al. disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 57**, the rejection of **Claim 56** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- sorting each presentation according to its score.

Nelson et al. disclose:

- sorting each presentation according to its score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include sorting each presentation according to its score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 58**, the rejection of **Claim 52** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score.

Nelson et al. disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein displaying the set of presentations to a user interface designer further

comprises displaying each presentation in a ranked list according to score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 66**, the rejection of **Claim 62** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model.

Nelson et al. disclose:

- wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein generating a set of presentations further comprises scoring each presentation according to the extent to which the presentation meets the application requirements

defined in the domain model, the user requirements defined in the user model, and the task requirements defined in the task model. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 67**, the rejection of **Claim 66** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- sorting each presentation according to its score.

Nelson et al. disclose:

- sorting each presentation according to its score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include sorting each presentation according to its score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

As per **Claim 68**, the rejection of **Claim 62** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score.

Nelson et al. disclose:

- wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score *(see Column 26: 44-48, "Once all candidate documents are scored, the final scores are sorted, and the documents presented to the user, providing the best scoring documents first. A threshold may be used to select a limited number of the best scoring documents if desired.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Nelson et al. into the teaching of Eisenstein et al. to include wherein displaying the set of presentations to a user interface designer further comprises displaying each presentation in a ranked list according to score. The modification would be obvious because one of ordinary skill in the art would be motivated to enhance usability.

Claims 75-77 are rejected for the same reasons set forth in the rejections of Claims 46-48.

20. **Claims 50, 60, 70, and 79** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eisenstein et al.** in view of **Puerta et al.** as applied to Claims 49, 59, 69, and 78 above, and further in view of **"Resource Description Framework (RDF) Model and Syntax," 1997 (hereinafter RDF1997)**.

As per **Claim 50**, the rejection of **Claim 49** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein the common notation format adheres to the Resource Description Framework specification.

RDF1997 discloses:

- wherein the common notation format adheres to the Resource Description Framework specification *(see Section 1, "RDF metadata can be used in a variety of application areas ...")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of RDF1997 into the teaching of Eisenstein et al. to include wherein the common notation format adheres to the Resource Description Framework specification. The modification would be obvious because one of ordinary skill in the art would be motivated to provide interoperability between applications that exchange machine understandable information on the Web *(see RDF1997 – Section 1)*.

As per **Claim 60**, the rejection of **Claim 59** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein the common notation format adheres to the Resource Description Framework specification.

RDF1997 discloses:

- wherein the common notation format adheres to the Resource Description Framework specification *(see Section 1, "RDF metadata can be used in a variety of application areas ...")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of RDF1997 into the teaching of Eisenstein et al. to include wherein the common notation format adheres to the Resource Description Framework

specification. The modification would be obvious because one of ordinary skill in the art would be motivated to provide interoperability between applications that exchange machine understandable information on the Web *(see RDF1997 – Section 1)*.

As per **Claim 70**, the rejection of **Claim 69** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein the common notation format adheres to the Resource Description Framework specification.

RDF1997 discloses:

- wherein the common notation format adheres to the Resource Description Framework specification *(see Section 1, "RDF metadata can be used in a variety of application areas ...")*.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of RDF1997 into the teaching of Eisenstein et al. to include wherein the common notation format adheres to the Resource Description Framework specification. The modification would be obvious because one of ordinary skill in the art would be motivated to provide interoperability between applications that exchange machine understandable information on the Web *(see RDF1997 – Section 1)*.

Claim 79 is rejected for the same reason set forth in the rejection of Claim 50.

21. **Claims 51, 61, 71, and 80** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Eisenstein et al.** in view of **Puerta et al.** as applied to Claims 42, 52, 62, and 72 above, and further in view of **"Extensible Markup Language (XML) 1.0," 1998 (hereinafter XML1998)**.

As per **Claim 51**, the rejection of **Claim 42** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein each presentation is an XML file.

XML1998 discloses:

- wherein each presentation is an XML file *(see Section 1, "Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behavior of computer programs which process them.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of XML1998 into the teaching of Eisenstein et al. to include wherein each presentation is an XML file. The modification would be obvious because one of ordinary skill in the art would be motivated to support a wide variety of applications *(see XML1998 – Section 1.1).*

As per **Claim 61**, the rejection of **Claim 52** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein each presentation is an XML file.

XML1998 discloses:

- wherein each presentation is an XML file *(see Section 1, "Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behavior of computer programs which process them.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of XML1998 into the teaching of Eisenstein et al. to include wherein each presentation is an XML file. The modification would be obvious because one of ordinary skill in the art would be motivated to support a wide variety of applications *(see XML1998 – Section 1.1).*

As per **Claim 71**, the rejection of **Claim 62** is incorporated; however, Eisenstein et al. and Puerta et al. do not disclose:

- wherein each presentation is an XML file.

XML1998 discloses:

- wherein each presentation is an XML file *(see Section 1, "Extensible Markup Language, abbreviated XML, describes a class of data objects called XML documents and partially describes the behavior of computer programs which process them.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of XML1998 into the teaching of Eisenstein et al. to include wherein each presentation is an XML file. The modification would be obvious because one of ordinary skill in the art would be motivated to support a wide variety of applications *(see XML1998 – Section 1.1).*

Claim 80 is rejected for the same reason set forth in the rejection of Claim 51.

Response to Arguments

22. Applicant's arguments filed on March 5, 2007 have been fully considered, but they are not persuasive.

In the remarks, Applicant argues that:

a) Applicants find nothing in Eisenstein's or Puerta's description of mapping processes that disclose generating a set of presentations having the particular characteristics disclosed in newly presented claims 42, 52, 62, and 72. In particular, the combination of Eisenstein and Puerta does not disclose "a set of presentations" where each "presentation in the set of presentations comprises an interaction delivery device and a display object that meets the requirements of the interaction delivery device" where the "interaction delivery device" component of each presentation "meets the user requirements defined by the user model and the task requirements defined by the task model" and where the "display object" component of each presentation "meets the task requirements defined by the task model and the application requirements defined by the domain model."

Examiner's response:

a) Examiner disagrees. The combination of Eisenstein et al. and Puerta et al. clearly discloses "a set of presentations" where each "presentation in the set of presentations comprises an interaction delivery device and a display object that meets the requirements of the interaction

delivery device" where the "interaction delivery device" component of each presentation "meets the user requirements defined by the user model and the task requirements defined by the task model" and where the "display object" component of each presentation "meets the task requirements defined by the task model and the application requirements defined by the domain model." *(see Eisenstein et al. – Figures 2 and 3; Page 74, "The designer should create mappings between platforms (or classes of platforms) and tasks (or sets of tasks). Additional mappings are then created between task elements and presentation structures that are optimized for a given set of tasks. We can assume these mappings are transitive; as a result, the appropriate presentation model is associated with each platform, based on mappings through the task model."; Puerta et al. – Page 173, "Each user may be involved in all tasks in a user-task model, or just in a subset of these tasks. The assignment of users to tasks is a mapping process."; Page 174, "An interface model must also define what objects are involved in the completion of the tasks represented in its user-task model component. Thus it is necessary to map objects to tasks in an interface model.").*

Note that Figures 2 and 3 of Eisenstein et al. clearly indicate "a set of presentations" where each "presentation in the set of presentations comprises an interaction delivery device and a display object that meets the requirements of the interaction delivery device." The combination of Eisenstein et al. and Puerta et al. teaches the mapping of a domain model, a user model, a task model, a platform model, and a presentation model, which is interpreted as meeting the interaction delivery device requirements, the user requirements, the task requirements, and the application requirements, where the mapping is used to generate a set of presentations for the various computer systems.

Furthermore, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Conclusion

23. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

WEI ZHEN
SUPERVISORY PATENT EXAMINER

QC / qc
April 13, 2007